IN THE CLAIMS

1. (currently amended) A linear actuator comprising:

a direct current (DC) motor having a stator and a rotor, said stator fixed to a reference frame;

a threaded shaft coupled to said rotor;

a torsion spring disposed perpendicular to said axis of said threaded shaft, said torsion spring comprising a center portion coaxially attached to said threaded shaft and an outer portion attached to said reference frame; and

a translation actuator threadedly coupled to said threaded shaft, said translation actuator rotationally stopped and operable to laterally translate in response to rotation of said threaded shaft by said DC motor [[;]].

2. (currently amended) The linear actuator of claim 1, wherein said torsion spring stores rotational energy from DC motor when said DC motor rotates said threaded shaft in a first rotary direction, said torsion spring returning rotational energy to said shaft in a second rotary direction when said DC motor is un-energized [[;]].

3. (original) The linear actuator of claim 1, wherein said translation actuator further comprises a portion operable to engage a mechanical load.

4. (original) The linear actuator of claim 1, wherein said threaded shaft is coaxially coupled to a rotational shaft stop, said shaft stop having a first and second shaft stop surface.

5. (currently amended) The linear actuator of claim 4, wherein said [[linear]] translation actuator further comprises a first and a second actuator stop, said first actuator stop contacting said first shaft stop surface in a first translation position and said second actuator stop contacting said second shaft stop surface at a second translation position, wherein a first and second force resulting from said first and second actuator stops contacting said first and second shaft stop surfaces, respectively, act tangential to a radius vector of said threaded shaft.

6. (currently amended) The linear actuator of claim 5, [[where an]] wherein application of a drive voltage pulse to said DC motor drives said linear actuator in a first direction until said second actuator stop contacts said second shaft stop surface and removing said drive voltage pulse releases said stored rotational energy in said torsion spring, said stored rotational energy driving said linear actuator in a second direction until said first actuator stop contacts said first shaft stop surface.

7. (currently amended) A linear translating actuator comprising:

a direct current (DC) motor having a stator and a rotor, said stator fixed to a reference frame;

a shaft rotatably coupled to said rotor;

an energy storing means for storing rotational energy from DC motor when said DC motor rotates said shaft in a first rotary direction, said energy storing means returning rotational energy to said shaft in a second rotary direction when said DC motor is un-energized; and

a conversion means for converting rotation motion of said shaft to an actuator lateral translation motion [[;]].

8. (currently amended) The linear actuator of claim 7, wherein said translation actuator further comprises an end portion operable to engage a mechanical load.

9. (original)The linear actuator of claim 7, wherein said shaft is coaxially coupled to a rotational shaft stop, said shaft stop having a first and a second shaft stop surface.

10. (currently amended) The linear actuator of claim 9, said translation actuator further comprises a first and a second actuator stop, said first actuator stop contacting said first shaft stop surface in a first translation position and said second actuator stop contacting said second shaft stop surface at a second translation position, wherein a first and second force resulting from said first and second actuator stops contacting said first and second shaft stop surfaces, respectively, act tangential to a radius vector of said threaded shaft.

11. (currently amended) The linear actuator of claim 10, [[where an]] <u>wherein</u> application of a drive voltage pulse to said DC motor drives said linear actuator until said second actuator stop contacts said second shaft stop surface and removing said drive voltage pulse releases said stored rotational energy in said torsion spring, said stored rotational energy driving said linear actuator until said first actuator contacts said first shaft stop surface.

12. (original) The linear actuator of claim of claim 7, wherein said energy storage means comprises a torsion spring, wherein a center portion of said torsion spring is coaxially coupled to said shaft and an outer portion of said torsion spring is coupled to said reference frame.

13. (original) The linear actuator of claim of claim 7, wherein said energy storage means comprises a elastic strip having a first and a second end, said elastic strip fixed to said frame at said first end and to said shaft at said second end, said elastic strip wrapping said shaft when said shaft is rotated in said first rotation direction, said elastic strip stretching and thus storing energy.

14. (original) The linear actuator of claim of claim 7, wherein said energy storage means comprises a linear spring having a first end and a second end, said linear spring fixed to said frame at said first end and fixed to a inelastic cord at said second end, said inelastic cord wrapping said shaft when said shaft is rotated in said first rotation direction extending said linear spring, said linear spring elongating thus storing energy.

15. (original) The linear actuator of claim 7, wherein said conversion means comprises a threaded screw member coupled to said shaft and a rotationally retained actuator, said actuator threadedly coupled to said threaded screw member.